

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A method of forming a microelectronic structure comprising:
 - forming a dielectric layer on a substrate;
 - patterning the dielectric layer to form a silicon region and at least one dielectric region; and
 - forming a low defect silicon germanium layer on at least one dielectric region.
2. (Original) The method of claim 1 wherein forming the low defect silicon germanium layer comprises forming the low defect silicon germanium layer by epitaxial lateral overgrowth.
3. (Original) The method of claim 1 wherein forming the low defect silicon germanium layer comprises forming the low defect silicon germanium layer wherein the low defect silicon germanium layer comprises greater than 50% germanium.

4. (Original) The method of claim 1 wherein forming the dielectric on the substrate

further comprises:

forming a buffer layer on the substrate; and

forming a dielectric layer on the buffer layer.

5. (Original) The method of claim 4 wherein forming the buffer layer comprises

forming the buffer layer by utilizing a grading technique.

6. (Original) A method of forming a photodiode comprising:

forming a dielectric layer on a silicon substrate;

patterning the dielectric layer to form a silicon region and a dielectric

region;

forming a low defect silicon germanium layer on the dielectric region;

doping the low defect silicon germanium layer with an n type dopant,

wherein an n type low defect silicon germanium layer is formed; and

forming metal contacts on the n type low defect silicon germanium layer

and on a low defect silicon germanium contact region.

7. (Original) The method of claim 6 wherein forming metal contacts on the low

defect silicon germanium contact region further comprises forming a p type low defect silicon germanium layer.

8. (Original) The method of claim 6 wherein forming the low defect silicon germanium layer comprises forming the low defect silicon germanium layer by lateral epitaxial overgrowth.

9. (Original) The method of claim 6 wherein forming the low defect silicon germanium layer comprises forming the low defect silicon germanium layer wherein the low defect silicon germanium layer comprises less than about 10^6 defects per cm^2 .

10. (Original) The method of claim 6 wherein forming the low defect silicon germanium layer comprises forming the low defect silicon germanium layer wherein the low defect silicon germanium layer comprises about 50% or greater germanium.

11. (Original) The method of claim 6 wherein forming a dielectric layer on a silicon substrate comprises forming the dielectric layer on a silicon on insulator (SOI) substrate.

12.-28. (Canceled)